Access to Global Information—A case of Digital Divide in Bangladesh

Anisur Rahman
Senior Asst. Director and Head Library and Information Division Northern University Bangladesh

Access to Global Information—A case of Digital Divide in Bangladesh

Md. Anisur Rahman
Senior Asst. Director
and Head
Library and Information Division
Northern University Bangladesh
3/18 Iqbal Road, Asad Avenue
Mohammadpur, Dhaka 1207
Bangladesh
Email: anisdacca@gmail.com

Abstract. ICTs can reduce communication costs and break down geographical borders. In the developed nations government policies are being established which attempt to ensure that all citizens will get the opportunity to access the effective use of ICTs in order to enable them to participate in the educational, social and economic activities and democratic processes. Developed countries are getting much benefit from the advancement of ICTs. There is digital divide between developed and developing countries. The term digital divide has been applied to the gap that exists in most countries between those with ready access to the tools of ICTs, and those without such access or skills. In other words, it is the gap between the have's and the have not's. The digital divide around the world is usually measured through statistical indices such as the number of telephone lines, personal computers, websites and Internet users and their ratio to the total population. This paper reviews the papers on issues related to digital divide that are affecting so many citizen in developing countries especially in Bangladesh and the factors that alienate people from enjoying the benefits of ICTs. The author recommends possible strategies that can be implemented in developing countries to reverse the widening gap of digital divide.

Keywords: Digital divide, ICT, Internet, Bangladesh

1. Introduction

Computers, modern telecommunication and the Internet all reduce communication costs and break down geographical borders. Information and communication technologies serve as powerful tools for empowering people, benefit business and virtually link people around the world to share their views, ideas and innovation.

2. Concept of Information Technology

Information technology today handles information in every conceivable form, whether music, video, graphics, speech, data, text. It also embraces an increasing range of technologies. Information technology is the use of modern technology to aid the capture, processing, storage and retrieval, and communication of information, whether in the form of numerical data, text, sound, or image. IT has a great impact on the societies. IT has impact on employment, education and training, commerce, at home, arts (music, animation and visual effects, writing, games), and all aspects of public administration and national defense.

3. Digitization

The globalization and localization of information and cultural values are basically predicated on digital technology. The invention of e-mail and the WWW leading to digital transmission

is the certainly the second digital revolution. Digital scanners and cameras can now be used to capture digital images for importation into computer systems. In the current information revolution, almost everything is digital TV, radio, air-conditioned, cars, airplane, refrigerators, industrial plants and telecommunication systems.

4. Digital divide

This digital revolution has created a brand new economic sector that simply did not exist before. Computers, modern telecommunication and the Internet all reduce communication costs and break down geographical borders. In addition, ICT can be an important driver in poverty reduction and assure sustained economic growth, better public welfare, and strong social solidity and democratic forms of government. In the developed nations government policies are being established which attempts to ensure that all citizens will get opportunity to access the effective use of ICTs in order to enable them to participate in the educational, social and economic activities and democratic process. Developed countries are getting much benefit from the advancement of ICT. So, there is a digital divide between developed and developing countries.

The concept of the digital divide has been used to highlight difference in electronic access to information based on economic, race, ethnic or social group and/or geographical location. The term digital divide has been applied to the gap that exists in most countries between those with ready access to the tools of ICTs, and those without such access or skills. It is "a gap, which tends to deepen, is produced between those individuals that can access new information and communication tools such as phones, TV sets or the Internet, and those who are too poor to get them between the have's and the have nots" (de Munster, 2004). People living in developed countries have the best access to the fastest computers, best telephone services, competitive Internet Service Providers, and a wealth of content and training relevant to their lives. On the other hand, people living in developing countries have limited access or no access at all to these technologies. The group "have nots" also don't have the more ability to use ICTs and even they don't know that technology can make their life easier. The real gap between these two groups of people is called the "digital divide" (Giri, 2002). Digital divide also refers to a "perceived inequality in access to, distribution, and use of information technology between two or more populations". To better understand the complex issues of the digital divide, one should review a report on "Spanning the Digital Divide" prepared by Bridges.org that identifies a host of global issues and concerns, causing factors, and several dimensions of digital divide (www.Bridges.org). The digital divide – the gap between those who have access and the ability to use ICT, and those who do not – remains vast access. For example (Legard, 2001):

- The total Internet bandwidth in Africa is equal to that in the Brazilian city of Sao Paolo.
- The total Internet bandwidth in all of Latin America is equal to that in Seoul, South Korea.
- As a proportion of monthly income, Internet access in the United States is 250 times cheaper than in Nepal and 50 times cheaper than in Sri Lanka.
- In the United States, 54.3 percent of citizens use the Internet, compared to a global average of 6.7 percent. In the Indian subcontinent, the proportion is 0.4 percent.

The digital divide around the world is usually measured through statistical indices such as the number of telephone lines, personal computers, websites and Internet users and their ratio to the total population.

Table. 1 Sample ICT statistics on world (per 1000 people)

Country	Population (millions)	Radios*	Households with TV sets	Phones		PC	Internet user
				Fixed	Mobile		
Albania	3.1	260	9.0	82	356	12	24
Denmark	5.4	1,400	9.8	643	956	656	696
Sweden	9	2,811	9.4	767	1034	763	756
France	60.4	950	9.5	561	738	487	414
Germany	82.5	570	9.4	661	864	561	500
UK	59.9	1,445	9.9	563	1021	599	628
USA	293.7	2,109	9.7	606	617	749	630
Australia	20.1	1,996	9.6	541	818	682	646
New Zealand	4.1	991	9.8	443	745	474	788
Bangladesh	139.2	49	2.9	6	31	12	2
India	1,079.7	120	3.7	41	44	12	32
Sri Lanka	19.4	215	3.2	51	114	27	14
Pakistan	152.1	105	3.9	30	33	5	13
Japan	127.8	956	9.9	460	716	542	587
Malaysia	24.9	420	9.8	179	587	197	397
Singapore	4.2	672	9.8	440	910	763	571
Source: *World development indicators 2005 World development indicators 2006							

One of the major barriers to access to ICT is economic. Population residing in developing countries or in low-income countries may be unable to gain access to IT because of the inability to purchase the required equipment, Internet provider service or other necessary resources. It may not be possible to bridge the divide, but it is important to prevent it from deepening, as a minimum, and to attempt to narrow it as much as possible. According to Reuter's reports at Berlin on Wednesday, April 26, 2006 "the digital divide is narrowing as citizens in emerging markets get online via computers and mobile phones, with some regions now on a par with developed nations" (Reuters, 2006). Peter korsten, European director at IBM's Institute for Business value said "within China and India, regions like Shanghai and Bangalore have almost the same level of Internet and mobile phone connections as developed nations" (Reuters, 2006).

5. ICT status in Bangladesh

The ICT status of Bangladesh is not remarkable without some favorable initiatives by the Government and by private entrepreneurs. Computer use in Bangladesh started with a mainframe computer in 1964. The Internet came in Bangladesh in 1993 and IP connectivity in 1996. In April 2000, the Government withdraws taxes on VSAT after that, the use of Internet scenario of the country has been changing rapidly. Presently, there are nearly 266 ISPs serving for accountholders-based connectivity with more than 500,000 users. The Ministry of Science and Information and Communication Technology approved the national ICT policy in 2002. Meanwhile, the ICT Act 2003, based on the United Nations Commission on

International Trade Law (UNCITRAL), known as the UNCITRAL Model Law on Electronic Commerce, has been drafted by the Ministry of Law, Justice and Parliamentary Affairs and is now being reviewed, while the Copyright Act has been amended to incorporate the Intellectual Property Rights (IPR). Although the ICT Act has not yet been published, the Copyright (Amendment) Act 2005 has been passed to protect intellectual property rights, including computer equipments like software, hardware and patent.

South East Asia-Middle East-West Europe (SEA-ME-WE-4) is a submarine cable consortium connecting 14 counties at 16 landing stations. Bangladesh joined the consortium and signed a MoU on 4 September 2002 at Bali in Indonesia, and then signed the Construction and Maintenance Agreement in 2004 in Dubai. After four years of joining the consortium, on 21 May 2006, the Prime Minister of Bangladesh inaugurated this submarine cable connecting with Bangladesh. The total length of the cable is 22,000 km (approx.), where the Bangladesh landing station is 1,260 km away from the Cox's Bazar seashore. According to the Project Director, the Submarine Cable Implementation Project "...initially Bangladesh would get the opportunity to transmit data 10 gbps which are equivalent to 100,000-voice channel**"** (The Independent, 2006). Meanwhile, many ISPs in Dhaka have already started using the submarine cable although an appropriate cable infrastructure is yet in place.

To introduce the e-governance the Government of Bangladesh is to implement a project "Support to ICT Task Force" under which a computer networking would be established initially covering 6 Divisional HQs by connecting the 8 ministries in the Bangladesh Secretariat with the Prime Minister's Office and the Planning Commission. The official website of the Government of Bangladesh is http://www.bangladesh.gov.bd/ contains link to ministries and government agencies. Government founded "ICT incubator centre" at Kawran Bazar in Dhaka, in which 48 firms are currently working in this incubator centre. An IT village is going to set up very close to Dhaka. The government has already made 18 acres of land available setting up IT village.

Table. 2 Fixed and Mobile phones user of Bangladesh

Year	Mobile phones					Total Mobile phone	Total Fixed Phone	Total Mobile & Fixed Phone
	Gameen Phone	AKTel	Banglalink	City Cell	TeleTalk			
2001	471371	80368	69700	41109	0	662548	564800	1227348
2002	774881	161265	112900	91348	0	1140394	682000	1822394
2003	1140531	401680	186500	179058	0	1907769	716721	2624490
2004	2388158	1096620	369500	296509	0	4150787	831280	4982067
2005	5540000	2072328	1026100	439389	191278	9269095	1081450	10350545
2006	8467000	2505664	2313900	686494	235255	14208313	1108990	15317303
Source: Bangladesh Economic Review 2006								

6. The role of libraries in closing the digital divide

Libraries, with their commitment to freedom of access to information, and promotion of life-long learning have an important role to play in closing the gap of the digital divide. Libraries are redefining their traditional roles in response to developments in IT and are taking on a more dynamic role in the new information intensive environment. In the developed and developing countries most libraries are now actively involved in the development and

teaching of information technology courses (Rahman, 2006). Public libraries provide free public access to and training for electronic and other information handling and play a most important role in the preparation for full participation in work and citizenship. As this trend progresses public librarians are realizing that they need to become information skills trainers and teachers to the many citizens who have no other opportunities for such education. Life-long learning and continuing education programs are being offered through many public libraries, often in cooperation with schools and colleges.

Libraries also play a role in spreading information technology to people who might not come into contact with the Internet otherwise. The SeniorSurf Day which has been held a couple of times at libraries in Finland, Sweden and Norway offers older citizens an opportunity to find out about all the 'goodies' on the Internet in a familiar environment. SeniorSurf Day has been a big success with in average 10,000 participants in each country per day (Ryynanen). It has encouraged many seniors to take more advanced courses. These are arranged by adult education centres in Finland and by various educational organizations and even telecom operators in the other Nordic countries. Libraries are a good answer to many of the challenges in the Information Society, including the promotion of information literacy. In this context libraries bear a special responsibility to ensure that the public has access to computer, the Internet, and other networked resources to allow all segments of society to participate in the information revolution.

7. Problems to access ICT

The following notable problems, which can be observed in ICT applications in developing countries like Bangladesh.

- Inadequate ICT infrastructure support as compared to other countries in this region
- Inadequate budget provision for establishment, maintenance and expansion of computer networks in the country
- Lack of holistic approach to infrastructure creation
- Lack of skilled manpower in public and private sectors
- Inadequate man machine ratio
- Lack of Internet facilities in sub-urban and district level
- Lack of suitable networking among the research institute
- Reliable power supply is a major hindrance to develop telecom infrastructure in the rural areas
- Lack of any centralized policy to progress of ICT in the country
- Lack of proper motivational activities to promote e-commerce and e-government
- Use of ICT within the government is still limited as only a small number of civil servant have Internet access and the know how

8. Recommendations

It may not be possible to bridge the divide, but it is important to prevent it from deepening, as a minimum, and to attempt to narrow it as much as possible. To narrow this gap of digital divide we may recommend our sincere comments as follows:

- Telephone and PC density should be raised to a satisfactory level

- Digital divide in urban-rural and national-international level should be narrowed down
- ICT policy should be implemented to its full extent
- Awareness should be created among the policy makers on the potential of ICT as an important element of its development
- Government should take steps to build the basic infrastructures in the rural areas: electricity, telephone, and Internet connectivity
- Have to create ICT awareness in rural areas so that people at the grass root level can have access to education and knowledge
- Have to set up Public Key Infrastructure (PKI) in support of e-commerce and e-government
- Set up high speed fiber-optic backbone up to upzila-level.
- Internet facilities have to reach sub-urban and district level
- Should improve quality of ICT education by improving laboratory and library facilities, Internet access to digital libraries and International Journals and databases
- Develop ICT training curricula for employees in order to ensure that they become computer literate and are able to utilize computers for conducting their tasks
- To meet the vision and objectives of ICT policy, it is necessary to develop skilled manpower in public sectors by training in ICT
- Man machine ratio should be upgraded
- There is a need for holistic approach to ICT infrastructure creation
- Encouraging and assisting mass-people with computer literacy
- Establishment of community information and communication centers to bridge the digital divide between urban and rural population
- Encourage private investments in telecommunication and information technology sectors
- Joint ventures between local and foreign entrepreneurs in the ICT sector will be promoted
- Introduce electronic voting system and general purpose identity cards for all citizen

The digital divide problem will always be there if

- there many languages cannot be processed and stored by computers;
- the personal computers and the software are still very expensive;
- the cost of bandwidth is still high in all over the world;
- the ability to use ICTs not increased notably.

9. Conclusion

ICT can make an important development impact because it can overcome barriers of social, economic, and geographical isolation, increase access to information and education, and enable poor people to take part in more of the decisions that affect their lives. The digital divide is deeping notably between advanced and developed countries. A collective action approach is required both within countries and among countries to achieve this target. Within countries, collaboration of government, private sector and NGOs is required, while among countries, advanced and developing countries should cooperate, the former advancing financial and technical support.

References

1. American Library Association. ALA joins national campaign to close digital divide. http://www.ala.org/ala/pressreleasesbucket/pressreleases200/alajoinsnational.htm

2. Bangladesh. Ministry of Finance (2007). Bangladesh economic review 2006. Dhaka: Ministry of Finance.

3. Bridges.org. Spanning the digital divide: understanding and tackling the issues. www.bridges.org/spanning

4. de Munster, IL (2004). The digital divide in Latin America: a case study. 70th IFLA General Conference and Council. Buenos Aires, Argentina, 22-27 August 2004.

5. Giri, J (2002). Digital Divide. Paper presented at ICT and development for computer association of Nepal IT conference, January 26-27, 2002 in Kathmandu.

6. Islam, Anwarul & Rahman, Md. Anisur. (2006). Growth and development of information technologies in Bangladesh. *The Electronic Library*. 24(2):135-46.

7. Legard, D (2001). Use IT to cut global poverty, UN report. (www.interconnection.org/resources/itpoverty.htm)

8. Rahman, Md. Anisur. Akhter, Razina (2006). The role of libraries and librarians in Information literacy: an overview. [Poster Presentation to ICDL 2006, 5-8 December, New Delhi, India] New Delhi:TERI, 2006.

9. Reuters (2006). World's digital divide gets smaller. www.iht.com/articles/2006/04/26/business/lost.php

10. Ryynänen, M. Information Literacy, Libraries and Policy Makers, White Paper prepared for UNESCO, the U.S. National Commission on Libraries and Information Science, and the National Forum on Information Literacy, for use at the Information Literacy Meeting of Experts, Prague, The Czech Republic. Website: www.nclis.gov/libinter/infolitconf&meet/papers/ryynanen-fullpaper.pdf

11. The Independent (Internet ed.). June 7 2006 (issue 1521) http://independent bangladesh.com/news/jun/07/07062006mt.htm#A12

12. World Bank (2005). World development indicators 2005. Washington, DC: World Bank.

13. World Bank (2006). World development indicators 2006. Washington, DC: World Bank.